

Applicants: Peter David East and Susan Elizabeth Brown  
Serial No.: 10/590,539  
Filed: August 24, 2006  
Page 2

### Amendments to the Claims

This listing of claims will replace all prior versions and listings of claims in the application:

### Listing of Claims

1. (Withdrawn-Currently Amended) A substantially purified peptide which comprises [a] consecutive amino acids, the sequence of which is selected from the group consisting of:

- i) ~~an amino acid sequence as provided in~~ SEQ ID NO:4,
- ii) an amino acid sequence which is at least 80% identical to SEQ ID NO:4,
- iii) ~~an amino acid sequence as provided in~~ SEQ ID NO:5,
- iv) an amino acid sequence which is at least 80% identical to SEQ ID NO:5,
- v) ~~an amino acid sequence as provided in~~ SEQ ID NO:48,
- vi) an amino acid sequence which is at least 80% identical to SEQ ID NO:48,
- vii) ~~an amino acid sequence as provided in~~ SEQ ID NO:53,
- viii) an amino acid sequence which is at least 80% identical to SEQ ID NO:53,
- ix) a biologically active fragment of any one of i) to viii), and
- x) a precursor comprising the amino acid sequence according to any one of i) to ix),

wherein the peptide exhibits antifungal and/or antibacterial activity.

2-4. (Deleted)

5. (Withdrawn) The peptide of claim 1 which is fused to at least one other polypeptide/peptide sequence.

Applicants: Peter David East and Susan Elizabeth Brown  
Serial No.: 10/590,539  
Filed: August 24, 2006  
Page 3

6. (Currently Amended) An isolated polynucleotide, the polynucleotide comprising [a] consecutive nucleotides, the sequence of which is selected from the group consisting of:

- i) ~~a sequence of nucleotides provided in~~ SEQ ID NO:9 or SEQ ID NO:10;
- ii) ~~a sequence of nucleotides provided in~~ SEQ ID NO:11;
- iii) ~~a sequence of nucleotides provided in~~ SEQ ID NO:12;
- iv) ~~a sequence of nucleotides provided in~~ SEQ ID NO:13;
- v) ~~a sequence of nucleotides provided in~~ SEQ ID NO:50;
- vi) ~~a sequence of nucleotides provided in~~ SEQ ID NO:51;
- vii) ~~a sequence of nucleotides provided in~~ SEQ ID NO:55;
- viii) ~~a sequence of nucleotides provided in~~ SEQ ID NO:56;
- ix) a sequence encoding a peptide comprising [a] consecutive amino acids, the sequence of which is selected from the group consisting of:[:]

- a) ~~an amino acid sequence as provided in~~ SEQ ID NO:4,
- b) an amino acid sequence which is at least 80% identical to SEQ ID NO:4,
- c) ~~an amino acid sequence as provided in~~ SEQ ID NO:5,
- d) an amino acid sequence which is at least 80% identical to SEQ ID NO:5,
- e) ~~an amino acid sequence as provided in~~ SEQ ID NO:48,
- f) an amino acid sequence which is at least 80% identical to SEQ ID NO:48,
- g) ~~an amino acid sequence as provided in~~ SEQ ID NO:53,
- h) an amino acid sequence which is at least 80% identical to SEQ ID NO:53,
- i) a biologically active fragment of any one of i) to viii), and
- j) a precursor comprising the amino acid sequence according to any one of i) to ix);

Applicants: Peter David East and Susan Elizabeth Brown  
Serial No.: 10/590,539  
Filed: August 24, 2006  
Page 4

- x) a sequence of nucleotides which is at least 80% identical to SEQ ID NO:9, SEQ ID NO:10, or SEQ ID NO:12;
- xi) a sequence of nucleotides which is at least 80% identical to SEQ ID NO:11 or SEQ ID NO:13;
- xii) a sequence of nucleotides which is at least 80% identical to SEQ ID NO:50, or SEQ ID NO:51; and
- xiii) a sequence of nucleotides which is at least 80% identical to SEQ ID NO:55, or SEQ ID NO:56

wherein the polynucleotide encodes a peptide exhibiting antifungal and/or antibacterial activity.

- 7. (Deleted)
- 8. (Previously Presented) A vector comprising the polynucleotide of claim 6.
- 9. (Previously Presented) A host cell comprising the polynucleotide of claim 6.
- 10. (Previously Presented) The host cell of claim 9 which is a plant cell.
- 11. (Withdrawn-Currently Amended) A process for preparing a substantially purified peptide which comprises [a] consecutive amino acids, the sequence of which is selected from the group consisting of:
  - i) ~~an amino acid sequence as provided in~~ SEQ ID NO:4,
  - ii) an amino acid sequence which is at least 80% identical to SEQ ID NO:4,
  - iii) ~~an amino acid sequence as provided in~~ SEQ ID NO:5,
  - iv) an amino acid sequence which is at least 80% identical to SEQ ID NO:5,
  - v) ~~an amino acid sequence as provided in~~ SEQ ID NO:48,
  - vi) an amino acid sequence which is at least 80% identical to SEQ ID NO:48,

Applicants: Peter David East and Susan Elizabeth Brown  
Serial No.: 10/590,539  
Filed: August 24, 2006  
Page 5

- vii) ~~an amino acid sequence as provided in~~ SEQ ID NO:53,
  - viii) an amino acid sequence which is at least 80% identical to SEQ ID NO:53,
  - ix) a biologically active fragment of any one of i) to viii), and
  - x) a precursor comprising the amino acid sequence according to any one of i) to ix),
- wherein the peptide exhibits antifungal and/or antibacterial activity, the process comprising cultivating a host cell according to claim 9 under conditions which allow expression of the polynucleotide encoding the peptide, and recovering the expressed peptide as a substantially purified peptide.
12. (Withdrawn) A composition comprising a peptide of claim 1, and one or more acceptable carriers.
13. (Previously Presented) A composition comprising a polynucleotide according to claim 6, and one or more acceptable carriers.
14. (Withdrawn) A method for killing, or inhibiting the growth and/or reproduction of a fungus and/or a bacteria, the method comprising exposing the fungus and/or bacteria to a peptide of claim 1.
15. (Currently Amended) A transgenic plant, the plant having been transformed with a polynucleotide according to claim 6, wherein the plant produces a peptide which comprises [a] consecutive amino acids, the sequence of which is selected from the group consisting of:
- i) ~~an amino acid sequence as provided in~~ SEQ ID NO:4,
  - ii) an amino acid sequence which is at least 80% identical to SEQ ID NO:4,
  - iii) ~~an amino acid sequence as provided in~~ SEQ ID NO:5,
  - iv) an amino acid sequence which is at least 80% identical to SEQ ID NO:5,
  - v) ~~an amino acid sequence as provided in~~ SEQ ID NO:48,

Applicants: Peter David East and Susan Elizabeth Brown  
Serial No.: 10/590,539  
Filed: August 24, 2006  
Page 6

- vi) an amino acid sequence which is at least 80% identical to SEQ ID NO:48,
- vii) ~~an amino acid sequence as provided in~~ SEQ ID NO:53,
- viii) an amino acid sequence which is at least 80% identical to SEQ ID NO:53,
- ix) a biologically active fragment of any one of i) to viii), and
- x) a precursor comprising the amino acid sequence according to any one of i) to ix),

wherein the peptide exhibits antifungal and/or antibacterial activity.

16. (Withdrawn) A method of controlling fungal and/or bacterial infections of a crop, the method comprising cultivating a crop of transgenic plants of claim 15.

17. (Withdrawn-Currently Amended) A transgenic non-human animal, the animal having been transformed with a polynucleotide according to claim 6, wherein the animal produces a peptide which comprises [a] consecutive amino acids, the sequence of which is selected from the group consisting of:

- i) ~~an amino acid sequence as provided in~~ SEQ ID NO:4,
- ii) an amino acid sequence which is at least 80% identical to SEQ ID NO:4,
- iii) ~~an amino acid sequence as provided in~~ SEQ ID NO:5,
- iv) an amino acid sequence which is at least 80% identical to SEQ ID NO:5,
- v) ~~an amino acid sequence as provided in~~ SEQ ID NO:48,
- vi) an amino acid sequence which is at least 80% identical to SEQ ID NO:48,
- vii) ~~an amino acid sequence as provided in~~ SEQ ID NO:53,
- viii) an amino acid sequence which is at least 80% identical to SEQ ID NO:53,
- ix) a biologically active fragment of any one of i) to viii), and

Applicants: Peter David East and Susan Elizabeth Brown  
Serial No.: 10/590,539  
Filed: August 24, 2006  
Page 7

- x) a precursor comprising the amino acid sequence according to any one of i) to ix), wherein the peptide exhibits antifungal and/or antibacterial activity.
18. (Withdrawn) A method of treating or preventing a fungal and/or bacterial infection in a patient, the method comprising administering to the patient a peptide of claim 1.
19. (Deleted)
20. (Withdrawn) An antibody which specifically binds a peptide of claim 1.
21. (Withdrawn-Currently Amended) A method for killing, or inhibiting the growth and/or reproduction of a fungus, the method comprising exposing the fungus to a peptide which comprises [a] consecutive amino acids, the sequence of which is selected from the group consisting of:
- i) an amino acid sequence comprising residues 25 to 67 of SEQ ID NO:14,
  - ii) ~~an amino acid sequence as provided in~~ SEQ ID NO:17,
  - iii) an amino acid sequence comprising residues 26 to 67 of SEQ ID NO:15,
  - iv) an amino acid sequence which is at least 75% identical to any one of i) to iii),
  - v) an amino acid sequence comprising residues 26 to 66 of SEQ ID NO:18,
  - vi) an amino acid sequence which is at least 50% identical to v), and
  - vii) a biologically active fragment of any one of i) to vi).
22. (Deleted)

Applicants: Peter David East and Susan Elizabeth Brown  
Serial No.: 10/590,539  
Filed: August 24, 2006  
Page 8

23. (Withdrawn-Currently Amended) A method of controlling fungal infections of a crop, the method comprising cultivating a crop of transgenic plants which produce a peptide which comprises [a] consecutive amino acids, the sequence of which is selected from the group consisting of:

- i) an amino acid sequence comprising residues 25 to 67 of SEQ ID NO:14,
- ii) an amino acid sequence comprising residues 25 to 66 of SEQ ID NO:16,
- iii) ~~an amino acid sequence as provided in~~ SEQ ID NO:17,
- iv) an amino acid sequence comprising residues 26 to 67 of SEQ ID NO:15,
- v) an amino acid sequence which is at least 75% identical to any one of i) to iv),
- vi) an amino acid sequence comprising residues 26 to 66 of SEQ ID NO:18,
- vii) an amino acid sequence which is at least 50% identical to vi), and
- viii) a biologically active fragment of any one of i) to vii).

24. (Deleted)

25. (Withdrawn-Currently Amended) A method of treating or preventing a fungal infection in a patient, the method comprising administering to the patient a peptide which comprises [a] consecutive amino acids, the sequence of which is selected from the group consisting of:

- i) an amino acid sequence comprising residues 25 to 67 of SEQ ID NO:14,
- ii) ~~an amino acid sequence as provided in~~ SEQ ID NO:17,
- iii) an amino acid sequence comprising residues 26 to 67 of SEQ ID NO:15,
- iv) an amino acid sequence which is at least 75% identical to any one of i) to iii),

Applicants: Peter David East and Susan Elizabeth Brown  
Serial No.: 10/590,539  
Filed: August 24, 2006  
Page 9

- v) an amino acid sequence comprising residues 26 to 66 of SEQ ID NO:18,
- vi) an amino acid sequence which is at least 50% identical to v), and
- vii) a biologically active fragment of any one of i) to vi).

26. (Deleted)

27. (Withdrawn) A kit comprising a peptide of claim 1.

28. (Withdrawn) The substantially purified peptide of claim 1 which comprises [a] consecutive amino acids, the sequence of which is selected from the group consisting of:

- i) an amino acid sequence which is at least 85% identical to SEQ ID NO:4,
- ii) an amino acid sequence which is at least 85% identical to SEQ ID NO:5,
- iii) an amino acid sequence which is at least 85% identical to SEQ ID NO:48,
- iv) an amino acid sequence which is at least 85% identical to SEQ ID NO:53,

wherein the peptide exhibits antifungal and/or antibacterial activity.

29. (Currently Amended) ~~The~~ An isolated polynucleotide ~~according to claim 6,~~ the polynucleotide comprising [a] consecutive nucleotides, the sequence of which is selected from the group consisting of:

- i) a sequence encoding a peptide comprising [a] consecutive amino acids, the sequence of which is selected from the group consisting of:
  - a) an amino acid sequence which is at least 85% identical to SEQ ID NO:4,
  - b) an amino acid sequence which is at least 85% identical to SEQ ID NO:5,



Applicants: Peter David East and Susan Elizabeth Brown  
Serial No.: 10/590,539  
Filed: August 24, 2006  
Page 10

- c) an amino acid sequence which is at least 85% identical to SEQ ID NO:48,
  - d) an amino acid sequence which is at least 85% identical to SEQ ID NO:53,
  - ii) a sequence of nucleotides which is at least 85% identical to SEQ ID NO:9, SEQ ID NO:10, or SEQ ID NO:12;
  - iii) a sequence of nucleotides which is at least 85% identical to SEQ ID NO:11 or SEQ ID NO:13;
  - iv) a sequence of nucleotides which is at least 85% identical to SEQ ID NO:50, or SEQ ID NO:51; and
  - v) a sequence of nucleotides which is at least 85% identical to SEQ ID NO:55, or SEQ ID NO:56,
- wherein the polynucleotide encodes a peptide exhibiting antifungal and/or antibacterial activity.